

## CLAIMS

What is claimed is:

1. A system that synchronizes electronic data and representations of the electronic data comprising:
  - a map bank that stores relationships between the electronic document and the representations; and
  - a mapping engine that utilizes at least one relationship to synchronize the electronic data and the representations such that a modification to the electronic data is mapped to the representations and a modification to a representation is mapped to the electronic data and the remaining representations.
2. The system of claim 1, further comprising a store that provides one or more handlers that mediate between the mapping engine and the data.
3. The system of claim 2, the one or more handlers comprise one or more of a file handler, a project handler, a service handler, a configuration handler, a code handler, an assembly handler, a reference handler and a user defined handler.
4. The system of claim 1, further comprising an adapter that facilitates mapping between the representations and the mapping engine.
5. The system of claim 1, the mapping comprises mapping electronic data operations to xml info set operations.
6. The system of claim 1, the relationships are stored as markup language representations.
7. The system of claim 6, the markup language representation is one of an xml file and a memory string.

8. The system of claim 1, further comprising a service bank that provides one or more services that facilitate synchronization.
9. The system of claim 8, the one or more services comprise at least one of an explicit synchronization service, a continuous synchronization service, and a demand loading service.
10. The system of claim 1, respective relationships are defined to support one of a single data type associated with a representation; a single data type associated with a plurality of representations; a plurality of data types associated with a plurality of representations; and a plurality of data types associated with a single representation.
11. The system of claim 1, further comprising an intelligent component that facilitates generating relationships.
12. The system of claim 1, further comprising an API that facilitates at least one of uploading relationships to the map bank and generating relationships in the map bank.
13. A method that synchronizes electronic data with respective representations, comprising:
  - receiving a request to modify electronic data;
  - locating a relationship between the electronic data and one or more representations;
  - generating at least one representation of the electronic data; and
  - employing the relationship to translate modifications made to the electronic data to the at least one representation and to translate modifications made to a representation to the electronic data and the remaining representations.
14. The method of claim 13, further comprising detecting that a modification has been made and determining the modification by comparing an unmodified version with the modified version.

15. The method of claim 14, further comprising employing a handler to detect and determine the modification.
16. The method of claim 14, further comprising employing one of an explicit synchronization and continuous synchronization approach to translate the modification.
17. The method of claim 13, further comprising rolling back the modification as an error occurs.
18. A method that synchronizes electronic data with respective representations, comprising:
  - generating a representation of electronic data;
  - modifying the representation;
  - obtaining a mapping between the electronic data and the representation; and
  - translating the modification made to the representation to the electronic data based on the mapping in order to synchronize the electronic data and the representation.
19. The method of claim 18, the mapping comprises mapping electronic data operations to representations operations.
20. The system of claim 18, further comprising modifying the data and translating the modification made to the electronic data to the representation based on the mapping.
21. The method of claim 18, further comprising generating one or more additional representations of the electronic data, wherein a modification to the electronic data is translated to all the representations and a modification to a representation is translated to the data and the remaining representations.
22. The method of claim 18, further comprising utilizing intelligence to generate electronic data-representation relationships.

23. A data packet transmitted between two or more computer components that facilitates synchronizing electronic data with a respective representation, comprising:  
generating a representation of electronic data; modifying the representation; obtaining a mapping between the electronic data and the representation; and translating the modification made to the representation to the electronic data based on the mapping in order to synchronize the electronic data and the representation.
24. A computer readable medium storing computer executable components to facilitate synchronizing electronic data with a respective representation, comprising:  
a component that detects a modification to a representation of electronic data;  
a component that obtains a mapping between the electronic data and the representation; and  
a component that utilizes the mapping to translate the modification to the electronic data to synchronize the electronic data and the representation.
25. A synchronization system, comprising:  
means for generating a representation of electronic data;  
means for associating the representation with the electronic data; and  
means for translating a modification to the representation to the electronic data to synchronize the electronic data and the representation.